502287239 03/26/2013

PATENT ASSIGNMENT

Electronic Version v1.1 Stylesheet Version v1.1

| SUBMISSION TYPE: | NEW ASSIGNMENT |
|-----------------------|----------------|
| NATURE OF CONVEYANCE: | ASSIGNMENT |

CONVEYING PARTY DATA

| Name | Execution Date |
|----------------|----------------|
| Suvi P. Haukka | 03/08/2013 |
| Antti Niskanen | 03/11/2013 |
| Marko Tuominen | 03/11/2013 |

RECEIVING PARTY DATA

| Name: | ASM International N.V. |
|-----------------|------------------------|
| Street Address: | Versterkerstraat 8 |
| City: | Almere |
| State/Country: | NETHERLANDS |
| Postal Code: | 1322 AP |

PROPERTY NUMBERS Total: 1

| Property Type | Number |
|---------------------|----------|
| Application Number: | 13702992 |

CORRESPONDENCE DATA

Fax Number: 9497609502

Correspondence will be sent via US Mail when the fax attempt is unsuccessful.

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Email: efiling@knobbe.com

Correspondent Name: Knobbe, Martens, Olson & Bear, LLP

Address Line 1: 2040 Main Street, 14th Floor Address Line 4: Irvine, CALIFORNIA 92614

| ATTORNEY DOCKET NUMBER: | ASMMC.089APC |
|-------------------------|--------------------|
| NAME OF SUBMITTER: | Andrew N. Merickel |

Total Attachments: 4

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PATENT REEL: 030090 FRAME: 0646 Application No.: 13/702,992 Docket Number: ASMMC.089APC Filing Date: December 7, 2012 Page 1 of 2

ASSIGNMENT

WHEREAS, Suvi P. Haukka, a FI citizen, residing at Helsinki, FI, Antti Niskanen, a FI citizen, residing at Helsinki, FI, and Marko Tuominen, a FI citizen, residing at Helsinki, FI, (individuals hereinafter "ASSIGNOR") invented certain new and useful improvements, technology, inventions, developments, ideas or discoveries related to SELECTIVE FORMATION OF METALLIC FILMS ON METALLIC SURFACES (collectively hereinafter referred to as the "Work") for which an application for Letters Patent in the United States has been prepared for filing (identified above) with the United States Patent and Trademark Office (hereinafter the "Application");

AND WHEREAS, ASM International N.V., a Corporation, with its principal place of business at Versterkerstraat 8, Almere, 1322 AP, Netherlands (hereinafter the "ASSIGNEE"), desires to acquire the entire right, title, and interest in and to the Application and the Work:

NOW, THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged, ASSIGNOR hereby acknowledges that ASSIGNOR has sold, assigned, transferred and set over, and by these presents does hereby sell, assign, transfer and set over, unto said ASSIGNEE, its successors, legal representatives and assigns, the entire right, title, and interest throughout the world in the Application and the Work, including all provisional applications relating thereto (including but not limited to U.S. Provisional Application No. 61/353,603, filed June 10, 2010), and all nonprovisional applications claiming priority thereto, including, all divisions, continuations, continuations-in-part, reissues, and reexaminations thereof, and all Letters Patent of the United States which may be granted thereon and all reissues and extensions thereof, and all rights of priority under International Conventions and any related Letters Patent which may hereafter be granted or filed in any country or countries foreign to the United States, all extensions, renewals and reissues thereof; and ASSIGNOR hereby authorizes and requests the Commissioner of Patents of the United States, and any Official of any country or countries foreign to the United States, whose duty it is to issue patents on applications as aforesaid, to issue all related Letters Patent to the ASSIGNEE, its successors, legal representatives and assigns, in accordance with the terms of this instrument.

AND ASSIGNOR DOES HEREBY sell, assign, transfer, and convey to ASSIGNEE, its successors, legal representatives, and assigns all claims for damages and all remedies arising out of any violation of the rights assigned hereby that may have accrued prior to the date of assignment to ASSIGNEE, or may accrue hereafter, including, but not limited to, the right to sue for, collect, and retain damages for past infringements of said Letters Patent before or after issuance.

AND ASSIGNOR DOES HEREBY covenant and agree that ASSIGNOR will communicate to said ASSIGNEE, its successors, legal representatives and assigns, any facts known to ASSIGNOR respecting the Work, and testify in any legal proceeding, assist in the preparation of any other provisional or non-provisional applications relating to the Application and the Work or any improvements made thereto, sign all lawful papers, execute and make all rightful oaths and/or declarations in connection with the Application and the Work including any improvements made thereto, any patent applications filed therefrom, and any continuing application filed from any of the aforementioned applications, and generally do everything possible to aid the ASSIGNEE, its successors, legal representatives and assigns, to obtain and enforce proper patent protection for the Work in all countries.

PATENT REEL: 030090 FRAME: 0647

| Application No.: 13/702, Filing Date: December 7 | | Docket Number: ASMMC.089APC Page 2 of 2 |
|--|-------------------------|--|
| Legal Name of inventor | : Suvi P. Haukka | |
| Inventor Signature: | <u> </u> | Date: March 8, 2013 |
| | Witnessed by: | 19.20 |
| | Witness Name (printed): | Ryan Webengood |
| Legal Name of inventor | : Antti Niskanen | |
| Inventor Signature: | | Date: |
| | Witnessed by: | • |
| | Witness Name (printed): | |
| Legal Name of inventor | | |
| Inventor Signature: _ | | Date: |
| | Witnessed by: | |
| | Witness Name (printed): | · |

14493366 ra 121112 Application No.: 13/702,992 Docket Number: ASMMC.089APC Filing Date: December 7, 2012 Page 1 of 2

ASSIGNMENT

WHEREAS, Suvi P. Haukka, a FI citizen, residing at Helsinki, FI, Antti Niskanen, a FI citizen, residing at Helsinki, FI, and Marko Tuominen, a FI citizen, residing at Helsinki, FI, (individuals hereinafter "ASSIGNOR") invented certain new and useful improvements, technology, inventions, developments, ideas or discoveries related to SELECTIVE FORMATION OF METALLIC FILMS ON METALLIC SURFACES (collectively hereinafter referred to as the "Work") for which an application for Letters Patent in the United States has been prepared for filing (identified above) with the United States Patent and Trademark Office (hereinafter the "Application");

AND WHEREAS, ASM International N.V., a Corporation, with its principal place of business at Versterkerstraat 8, Almere, 1322 AP, Netherlands (hereinafter the "ASSIGNEE"), desires to acquire the entire right, title, and interest in and to the Application and the Work:

NOW, THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged, ASSIGNOR hereby acknowledges that ASSIGNOR has sold, assigned, transferred and set over, and by these presents does hereby sell, assign, transfer and set over, unto said ASSIGNEE, its successors, legal representatives and assigns, the entire right, title, and interest throughout the world in the Application and the Work, including all provisional applications relating thereto (including but not limited to U.S. Provisional Application No. 61/353,603, filed June 10, 2010), and all nonprovisional applications claiming priority thereto, including, all divisions, continuations, continuations-in-part, reissues, and reexaminations thereof, and all Letters Patent of the United States which may be granted thereon and all reissues and extensions thereof, and all rights of priority under International Conventions and any related Letters Patent which may hereafter be granted or filed in any country or countries foreign to the United States, all extensions, renewals and reissues thereof; and ASSIGNOR hereby authorizes and requests the Commissioner of Patents of the United States, and any Official of any country or countries foreign to the United States, whose duty it is to issue patents on applications as aforesaid, to issue all related Letters Patent to the ASSIGNEE, its successors, legal representatives and assigns, in accordance with the terms of this instrument.

AND ASSIGNOR DOES HEREBY sell, assign, transfer, and convey to ASSIGNEE, its successors, legal representatives, and assigns all claims for damages and all remedies arising out of any violation of the rights assigned hereby that may have accrued prior to the date of assignment to ASSIGNEE, or may accrue hereafter, including, but not limited to, the right to sue for, collect, and retain damages for past infringements of said Letters Patent before or after issuance.

AND ASSIGNOR DOES HEREBY covenant and agree that ASSIGNOR will communicate to said ASSIGNEE, its successors, legal representatives and assigns, any facts known to ASSIGNOR respecting the Work, and testify in any legal proceeding, assist in the preparation of any other provisional or non-provisional applications relating to the Application and the Work or any improvements made thereto, sign all lawful papers, execute and make all rightful oaths and/or declarations in connection with the Application and the Work including any improvements made thereto, any patent applications filed therefrom, and any continuing application filed from any of the aforementioned applications, and generally do everything possible to aid the ASSIGNEE, its successors, legal representatives and assigns, to obtain and enforce proper patent protection for the Work in all countries.

PATENT REEL: 030090 FRAME: 0649

| Application No.: 13/702,992 Filing Date: December 7, 2012 | Docket Number: ASMMC.089APC Page 2 of 2 |
|--|--|
| Legal Name of inventor: Suvi P. Haukka | |
| Inventor Signature: | Date: |
| Witnessed by: | |
| Witness Name (printed): | |
| Legal Name of Inventor: Antti Niskanen Inventor Signature: Witnessed by: Witness Name (printed): | Date: 11-Mar-2013 HANNU HUOTTHEL |
| Legal Name of inventor: Marko Tuominen Inventor Signature: Witnessed by: | Date: 11-Mar-2013 HANNU HUOTARI |

14493366 ra 121112

> PATENT REEL: 030090 FRAME: 0650

RECORDED: 03/26/2013